Verein Deutscher Eisen--und
Stahlindustrieller
German designs on French
Lorraine

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1918

GERMAN DESIGNS
ON
FRENCH LORRAINE

The Secret Memorandum of the
German Iron and Steel Manufacturers

From the German

LONDON: GEORGE ALLEN & UNWIN LTD.
RUSKIN HOUSE 40 MUSEUM STREET W.C.1
1918

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FOREWORD

THIS Secret Memorandum, which is now published in full for the first time, was addressed at the close of 1917 by the Association of German Iron and Steel Manufacturers and the Association of German Ironmasters to the Imperial Chancellor, Count von Hertling, and to Field-Marshal von Hindenburg. It is a plea for the annexation to Germany of that part of Lorraine which was left to France in 1871, and some districts of which—more particularly the Longwy-Briey district—are very rich in high-grade iron ores.

The whole argument of this "strictly confidential" document rests on the assumption that Germany has the right to take whatever she needs from a neighbour if she is strong enough to take and keep it. Germany, or rather the group of iron magnates who drafted this Memorandum, thinks that the iron of French Lorraine is necessary for the future prosperity of the German Empire and for the successful waging of "a future war." Therefore the Franco-German frontier must at all costs be shifted farther west when peace is declared.

Such an annexation is represented as the best guarantee of peace, not because it will satisfy the wishes of the native population, but because it will ensure the swift and easy triumph of German arms in any future conflict.

We need not dwell on the prospect thus opened for the world at large, nor on the characteristically

German assertion that "treaties offer no security whatever" (p. 24). The authors of this Memorandum are obviously hard-headed, practical Germans, men of business and "realists," dealing in facts, not in ideas.

The facts on which their demonstration is based are not, however, accurate. For the purpose of their demonstration it was necessary to represent the home supply of Germany in iron ore as smaller than it really is, and, on the other hand, to exaggerate the wealth of France in this raw material, more particularly in the Normandy ironfields. It may be useful therefore to correct here these intentional misstatements of facts.

As regards the home supply of Germany in iron ore (pp. 19—21), it should be noted that the Memorandum does not mention the Bavarian deposit, which, however, was the object of several special studies by German geologists some ten years ago. Its contents were estimated by Professor Holzapfel of Strasburg (*Glückauf,* March 12, 1910) at 1,700 million tons, a figure which certainly represents a minimum, since the Professor has provided in his calculations for an adequate co-efficient of guarantee.

Furthermore, in their general estimate of the life of all the German iron-mines, the authors of the Memorandum rely entirely on the authority of Professors Beyschlag and Krusch (pp. 19—21), who value this life at forty to fifty years. According to the figures submitted in 1910 to the Stockholm Congress by two other eminent authorities, Herr Ewecke and

Herr W. Kohler, members of the Royal Geological Academy of Berlin, the total resources of Germany's iron deposits are 3,907 million tons or, roughly, 4,000 million tons. The exhaustion by Germany of these resources in the space of forty years, as contended by Beyschlag and Krusch, would correspond to an average annual consumption of 100 million tons of iron ore, viz., to a production of about 35 million tons of pig-iron from home-mined ores alone. If we add to this figure the average yearly import of foreign ore as given by the latest pre-war statistics, we find that, according to Beyschlag and Krusch, Germany, after the war, would produce some 42 million tons of pig-iron yearly, whereas before the war (in 1913) her highest yearly output was 19,309,000 tons.

To support the contention that Germany must annex the iron deposits of French Lorraine, the Memorandum emphasises the difficulties which, it is alleged, France placed in the way of German businesses in the Longwy-Briey district (pp. 24, 25). Their protest in this respect is not supported by facts. The Germans before the war had bought concessions and taken large shares in the Briey orefields, so that after a few years they controlled 16,210 acres out of 104,695 acres conceded, or approximately 16 per cent. of the total area. It was only when the French Administration discovered that, according to their custom, the German business men were pursuing here a policy of invasion and monopoly, that precautionary measures were taken. Subsequent manœuvres to extend the German influence proved how wise these measures had been.

Concerning the ironfield of Normandy, the present Memorandum tries to create the impression that all the credit for its survey and exploitation belongs to Germans. They had, it is true, carried out important research work in this area before the war, but, long before they became interested (about 1902) in this ironfield, similar work had been done there by French companies, since the Diélette concession was granted in 1875, that of Halouze in 1884, and that of Ferrière-aux-Étangs in 1901. The estimation of the wealth of this ironfield, which is put at 5,000 million tons by the Memorandum (p. 27), bears no relation whatever to the figures supplied by the various geologists who have studied this deposit. In 1910, M. Nicou, State Mining Engineer, estimated the Normandy deposit at 220 million tons, and possibly at 700 million "if certain synclinals reach their maximum depth only at 1,200 metres or more."[1] In 1918, M. Cayeux, Professor of Geology at the Collège de France, estimated the total deposits of iron ore in Normandy at 760 million tons, taking no account of those parts in these areas concerning which information is lacking for the valuation of their wealth.[2] More noteworthy still is an article published in 1916 in an authoritative German review, *Glückauf*, by Dr. F. Friedensburg, on the ironfield of North-Western France.[3] Herr Friedensburg estimates

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[1] "Ressources de la France en minerai de fer," by M. Nicou, Ingénieur au Corps des Mines (Dunod, 1911).

[2] Report of M. Cayeux, Professor at the Collège de France on the Inventory of the Normandy Iron Ore.

[3] "Der Eisenerzbergbau in Nordwest Frankreich," by Bergassessor Dr. F. Friedensburg, Herisau (Switzerland), *Glückauf*, 10 October, 1916.

"the resources of Normandy in really exploitable iron ore at 500 million tons, if one assumes that the deposit extends in depth under suitable conditions for exploitation, and that it is exploited to a depth of 700 to 1,000 metres."

The Germans in this Memorandum are depicting the Normandy ironfields in very bright colours in order to demonstrate that France, even after giving up to Germany the Briey-Longwy district, would still remain in possession of very great iron resources. In the course of recent negotiations, undertaken under the auspices of the British and French Governments, between the mining concerns of Western France and English metallurgists with a view to examining the possibility of exporting to England iron ores from Western France, it was found that within ten years after the war one might hope to raise the production of this district to 3 million or 4 million tons per year, out of which 1,500,000 tons would be available for export. Now, the output of the Briey basin, less than fifteen years after the granting of concessions, had already risen to more than 19 million tons yearly. It appears, therefore, that no comparison is possible between the Briey and the Normandy ironfields.

A closer examination of these two mining areas would show that, from the point of view of their *total wealth*, the Lorraine area contains approximately 3,000 million tons of iron ore, whereas the Normandy basin, according to the most authoritative estimates quoted above, holds only one quarter or one fifth of this amount. The German authors of the present Memorandum have therefore purposely underrated the importance of the Lorraine deposit, while they multiplied by ten the resources of the Normandy deposit. From the point of view of *quality,* the amount of iron in the kind of ore mostly found in Normandy (carbonate) is approximately the same as that in the Briey ore; but the former is siliceous, and holds very little lime, while the latter is sometimes richer in lime than in silex. Lastly, the *conditions for exploitation* are much more favourable in the Briey district, where the ore is found in thick layers, regular in formation, slightly inclined, and fairly homogeneous, whereas in Normandy the ore varies in thickness, lies very much aslant, sometimes even vertically, and varies greatly in composition, being apparently richer in silex as one gets deeper. Thus, while the average individual daily output at Briey is five and a half to six tons per miner, it is only three tons in Normandy, and the cost of production is twice as great.

In one more particular the figures given by the German authors of this Memorandum are remarkably inaccurate. It is stated (pp. 28, 29) that in German Lorraine the value of the ton of ore taken at the pit was officially given as Mk.2.67 in 1912 and as Mk.2.59 in 1913, whereas the official value of the French ore imported was in 1913 Mk.6.80 per ton. The figures for German Lorraine clearly refer to the value of the ton of ore at the pit mouth, as fixed by the German Government for purposes of taxation. It is difficult to see how the figure of Mk.6.80 per ton for the French ore was arrived at, for the value assessed for taxation by the French Government for Briey ore was determined on the same principles as that of the German ore, and amounted to Fr.4.25 to Fr.4.50, that is to say, Mk.3.40 to 3.60. The sale price of the ore from the French mines to German factories did not exceed Fr.4.25, delivered on rail at Homécourt. The Memorandum here ignores the fact that mining costs were greater on the French than on the German side of the frontier, owing to the greater depth of the French deposit. The whole argument evidently aims at hinting that France was making undue profits out of the exports of ore to German industry.

These observations may serve to give the reader a more correct idea of the actual state of iron power as between France and Germany, which this Memorandum endeavours to obscure in order to further the shameless plea of the German Metallurgists for the annexation of French Lorraine. The truth is that, in the years that preceded the war, France was far too hospitable and long-suffering for those same people who to-day regret that Bismarck did not steal more French territories in 1871, and who openly avow that Germany must annex more French minefields in order to be able to wage another war with better chances of complete success.

But this is not all. This Secret Memorandum not only demonstrates that the annexation of the mining districts of French Lorraine would place Germany in the most favourable position for renewing the European War, but also that the German Empire would never have been able to undertake the present war, or to carry it on for a long time, if it had not been in possession of Alsace-Lorraine. Thus the authors of this document prove in the most convincing manner that the restoration of Alsace-Lorraine to France is, to use their own phrase, "unavoidably necessary," both in order to redress the great wrong done to France in 1871 and—by depriving Germany of the mining district which, on the German Metallurgists' own confession, has been the foundation of her military power—to secure Europe against a return of the present catastrophe.

R. L. C.

Association of German Iron and
Steel Manufacturers
and
Association of German Ironmasters.

(Strictly Confidential.)

MEMORANDUM ON THE INCORPORATION IN THE GERMAN EMPIRE OF THE FRENCH LORRAINE IRONFIELD.

(Issued only in manuscript form.)

ABSTRACT.

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BERLIN AND DUESSELDORF.
December, 1917.

I.—OUR DEPENDENCE ON FOREIGN COUNTRIES FOR OUR SUPPLY OF IRON ORE CONSTITUTES A VERY GRAVE DANGER TO GERMAN INDUSTRY AS WELL AS TO THE STATE AND THE PEOPLE.

Our Supply of Iron Ore before the War.—The war has revealed the highly dangerous weakness which results from the great dependence of our iron industry on foreign ores for its supply. A single wireless message flashed from London was sufficient for the British fleet, all-powerful on the seas, to block our oceanic communications and cut us off from overseas transport.

For a long time past the German ore-mining industry has ceased to meet the needs of the iron industry of Germany. For several decades we have had to send our ships to the European countries which are rich in iron ore, notably to Spain, Sweden, Norway, as well as to Russia, and more recently to Africa, to Tunis, to British India, Newfoundland, Brazil, and Canada, in order to supplement the inadequate supplies of our home-mined iron ore by foreign ores transported across thousands of miles of ocean. Since the beginning of the present century our supply of iron ore from France, especially from the French Lorraine mines, has likewise become very important. In a lesser degree, Greece, Austria-Hungary, Portugal, Holland, Italy, and Turkey are also to be counted among the countries supplying us with raw materials.

The imported ores are indispensable, not only to Upper Silesia and the blast furnaces set up on the shores of the North Sea and the Baltic, but, above all, to the Rhenish-Westphalian industry, because the orefields within its own metallurgical area have for several decades been unproductive.

In 1900 our industry was still mainly dependent on German ore.

In 1900	Quantity. Million tons.	Metallic Iron in the Ore. Million tons.	Value. Million marks.
The home supply (production of home mines, deducting exports) was	15.7	about 5.2	65.7
The imports were	4.1	about 2.1	75.2
The total supply was	19.8	about 7.3	140.9

The supply per cent. was therefore as follows :—

	Proportion per cent.	Amount of Iron per cent.	Value per cent.
In home-mined ores	79.3	71.2	46.6
In foreign ores	20.7	28.8	53.4

Consequently, even at the beginning of this century, the German iron industry had to pay to foreign countries for its supply of iron ores a much higher sum than it paid to the home producers. Up to the beginning of the war the situation was constantly changing to the disadvantage of the home-mined ores.

In 1913	Quantity. Million tons.	Metallic Iron in the Ore. Million tons.	Value. Million marks.
The home supply (production of home mines, deducting exports) was	33.3	9.6	125.7
The imports were	14.0	7.7	227.1
The total supply was	47.3	17.3	352.8

The supply per cent. was therefore as follows :—

	Proportion per cent.	Amount of Iron per cent.	Value per cent.
In home-mined ores	70.4	55.5	35.92
In foreign ores	29.6	44.5	64.08

In 1913 the home-mined ore, from the point of view of quantity, considerably exceeds the foreign ore, but, if considered from the point of view of the iron contained, the imports give us about one-half of the consumption of our blast furnaces, and, from the point of view of value, the imports of foreign ore were almost double the value of the home ores smelted.

Our Enemies' Iron Ore Supply is fully assured.—Throughout the world there was not one important iron-producing country, except the second-class State Belgium, whose supply in raw material was as dependent on foreign countries as that of Germany. Our neighbours and enemies, France and Russia, are both so rich in iron ores that they not only meet their own needs in these ores, but are also able to export them in ever-increasing quantities. The export of "minettes" by France was mainly towards Germany and Belgium. Russia supplied with its rich ores, especially with its manganese ores, almost all the iron industries of the world. The United States possess such gigantic orefields that, as compared with a production of more than 60 million tons in 1913, their imports, amounting to hardly more than two million tons, were almost insignificant. Great Britain is the only country whose situation, as regards the supply of iron ores, is analogous to that of Germany, for Great Britain shows a proportionally high quantity of ore imports, amounting in 1913 to about 7.4 million tons against 16.3 million tons of home-mined ores. It was from the countries which supplied England with ores that Germany also obtained her supply.

There is, however, a great difference between the situation of England and that of Germany in regard to the supply of ores, and it arises from the British mastery of the seas. The huge Navy of Great Britain ensured for that country, even in time of war, its overseas ore imports, whereas Germany was at once cut off from almost all the other ore-producing countries. Moreover, the only country rich in ore with which we are still in direct communication, namely Sweden, does not help us any longer to the same extent as before the war.

The Iron Ore Supply of Germany in War Time is very precarious.—It follows that the present supply of the German blast furnaces is almost entirely reduced to our home fields, the ores of which contain much less iron, and are therefore of less value than the raw material from abroad. Our works, therefore, have not been able to reach anything like the same output of pig-iron as in time of peace. Whereas during 1913, the last year of peace, about 19.3 million tons of pig-iron were produced, and the yearly output was on the way to 20 million tons, our annual production fell, during the first full years of the war, to 11.8 million tons in 1915, and to 13.3 million tons in 1916.

Even this output of pig-iron, which is only equal to from 60 to 88 per cent. of the peace-time output, would have been impossible if the French had been able, immediately after the declaration of war, to destroy by long-range gunfire from their fortress of Longwy, situated close to the frontier, the mine pits and blast furnaces of the iron districts of Luxemburg and Lorraine, which constitute good high targets. This output would have been equally impossible if the French had at once been able merely to blow up their own pits and works close to the frontier.

Great Importance of the Minette Ores of Lorraine and Luxemburg for War Purposes.—**Happily for us, the French did not succeed in destroying the iron districts situated on both sides of the Franco-German frontier; otherwise, the supply of munitions for our artillery being inadequate, the war would have been decided against us in a few months. There is no doubt that Germany would have been forced to yield extensive territories on the left bank of the Rhine, and that, through the loss of her most important mining district, Lorraine, she would have been deprived of one of her main sources of strength, thereby losing her position as a world power.** For, in 1913, out of a total output of 35.9 million tons within the boundaries of the German customs-district, the mining industry of Lorraine and Luxemburg contributed as its share 28.5 million tons; and, from the point of view of the amount of iron extracted, its share out of a total of 10.54 million tons was no less than 8.15 million tons, that is to say, 77 per cent. The producing capacity of all the other iron mines of Germany taken together was only 7.4 million tons of iron ore, yielding 2.39 million tons of iron in all. **Had we lost Lorraine, even if the production of the other German mines had been increased, it would not have been possible to wage the present war on three fronts at once**

—with only 4 million or 5 million tons of German iron and 2 million or 3 million tons of Austro-Hungarian iron.

Superiority of the Enemy Iron Industries.—For, on the enemy side, the iron resources were as follows. In 1913 the output of pig-iron was:—

	Tons.
England	10,650,000
France	5,120,000
Russia	4,735,000
Belgium	2,475,000
Italy	380,000
Total	23,360,000
Besides, the United States produced	31,460,000
Grand Total	54,820,000

Consequently, from the point of view of resources available for war, the Central Powers would have been confronted by a sevenfold or an eightfold superiority, and would undoubtedly have been compelled soon to lay down their arms.

The German people were saved from such an outcome of the war by the swiftness of their military operations. Belgium was overcome at a gallop; at the first shock the French were driven back within their own frontiers, and the war was carried far into the enemy territories. These successes afforded protection to our mining district, Lorraine, and enabled us to conquer the French portion of this province with its great mineral wealth, securing its exploitation for the German military administration. The mines restored to activity during the war in the French Lorraine mining area did so well during the year 1917 that, thanks to them, we were able to provide in full the iron required by our artillery for its munitions.

II.—FORETHOUGHT FOR THE FUTURE RENDERS THE DISPLACEMENT OF THE LORRAINE FRONTIER NECESSARY AND UNAVOIDABLE.

After their experience in the present war, the French in the next war will not again allow us sufficient time to take the necessary measures for the protection of the most vulnerable part on the whole of our Western front, and let us, by a renewed invasion of France, forestall the destruction of the industries lying close to the frontier. As far as we are concerned, at any rate, we must draw from the experience of this war the conclusion that, in any future war, we must take better measures than in the past to safeguard, not only our own frontiers, but also the sources of our economic and military power, against destruction by the enemy. In Lorraine, if we had been content to defend our former frontiers, we should have abandoned to destruction by the enemy whole mining regions, together with many new and immensely important industrial establishments; furthermore, the chief part of Germany's iron and steel supply for armaments would have been compromised, thus throwing the future existence of the German Empire into jeopardy. This fact alone is enough to prove the necessity of shifting the Lorraine frontier farther west.

The German Ironfields will soon be exhausted.—Furthermore, this removal of the frontier is unavoidably necessary because, in the mining resources of the German customs-district, we no longer possess enough iron ores to feed in the future our great iron-producing works and the numerous highly developed branches of our iron-manufacturing industry, and to provide work for our large labouring class. Unfortunately, the true situation regarding our ironfields is not generally known among the German public. Competent men in scientific circles and among the mine owners and iron manufacturers are unanimous on the point that within forty or fifty years the German mining industry will collapse, because our ironfields will be exhausted. These calculations are confirmed by the recent researches of Prof. Dr. Beyschlag, *Geh. Bergrat,* Director of the Royal Geological Institute of Prussia, and by those of Prof. Dr. Krusch, *Geh. Bergrat,* Departmental Director at the Royal Geological Institute of Prussia in Berlin, both of whom have utilised in their work the mining observations made during the first three years of the war. By request of the Association of German Iron and Steel Manufacturers and of the Association of German Ironmasters, these two scientists, who are to be considered as the most competent in these matters in Germany, have, in a specially written Memorandum on "The Iron Ore Supply of Germany after the War," given in detail their opinion on the three following questions :—

(1) What reserve supplies are at the disposal of the German iron and steel industry within the country itself for the next ten years?

(2) Which of the home ironfields must be saved, after the conclusion of peace, to be used as a reserve for future wars?

(3) From which countries should the German iron and steel industry import its ores in the future, in order not to endanger its subsequent development? And, more particularly, what is the position of the French-Lorraine "minettes," of the Krivoi Rog low-phosphorous ore, of the Caucasus manganese ore, and of the Brazilian ores?

A thorough investigation of those questions led to the following results.

Assuming an economical development of the mines (without regard to development at great depth), the duration of their existence, calculated on the basis of the situation at the beginning of 1917, is :—

(1) For the main district, namely, the area of the German-Lorraine minettes, a duration of 45 years.

(2) For the district second in importance, namely the Siegerland, assuming a development not exceeding a depth of 1,300 metres, a duration of 42 years.

(3) For the district third in importance, namely, the Lahn-Dill district, as far as hematite ore is concerned, a duration of 56 years.

(4) For the district fourth in importance, namely, the Peine-Salzgitter district, one reckons on a duration of more than 135 years; but this field, however important, only holds about one-tenth of the total amount of ore contained in the German ironfields.

The other districts have a more or less great duration in prospect, but, as their output is less important, they do not play a conspicuous part in our iron and steel industry.

On an average, Beyschlag and Krusch estimate the duration of the German iron mines at 40 or 50 years.

If, indeed, figures are eloquent, the above figures proclaim a harsh truth: they tell us plainly that, within 40 years or so, Germany will reach the end of her home supply of iron ore, which means the end of her iron power, and that, after the year 1970, she will no longer be able to defend herself with German iron against her foes, but will be doomed to ruin.

A Policy of Accumulation of Stocks of Iron is inadequate to protect us in the event of a future War.—**Let it not be believed that Germany can adequately provide against a future war by resorting to a policy of accumulating stocks of iron ore in times of peace. Who would accept the responsibility of relying upon this method for providing sufficient stocks of iron? Who, besides, could estimate, even approximately, how long this new war will last, which nations will enter the lists against Germany, and what quantities of iron such a war will, therefore, consume?** No one had the slightest idea of the great part which iron and steel were to play in the present war. In 1870 the blast furnaces of Germany had reached an output of 1.4 million tons; in 1913 their output had risen to 19.3 million tons—that is, it had become fourteen times greater. During the war of 1870-71 Germany used little more than 10,000 tons of iron and steel, whereas, during the first forty months of the present war, the consumption of iron and steel in Germany for military purposes has risen to more than fifty million tons. Thus, at the present time, we use up in one day larger quantities of iron and steel than we consumed during the whole of the war of 1870-71!

Nor is an Iron Industry solely based on the Smelting of Scraps sufficient.—It is also a mistake to claim that the future of the iron industry does not rest so much on the smelting of ores as on the transformation by fusion of discards and scraps; that is to say, of the scraps produced in the rolling mills and the works using iron. Only a superficial view of our present military experiences could induce anyone to support such an idea. The output of Siemens-Martin steel, which is mainly based on the smelting of discards and scraps, and only partly on the use of pig-iron, has, indeed, made considerable progress during the present war, more rapid progress than the output of Thomas steel, which is solely based on the transformation of ore.

We manufactured—

	In 1913		In 1916	
	Tons.	Percentage of total output.	Tons.	Percentage of total output.
Thomas steel ..	10,630,000	56	7,654,000	47
Siemens-Martin steel	7,977,000	42	8,055,000	50
Other steel	328,600	2	473,300	3

Yet this difference in favour of Siemens-Martin steel is not in any way the effect of a natural, peaceful development, but merely the consequence of an activity encouraged by every possible means; the manufacture of electric and crucible steel has likewise been increased in every possible way. On the one hand, this saving of steel was necessary, because we were short of the ores required to increase the output of Thomas pig-iron and steel, and on the other hand, it has only been possible because we had conquered vast territories possessing great industrial activity and big stocks of iron and scrap which could be pressed into the service of our national needs.

If our steel works had gone on depending exclusively on home resources for their supply of discards and scraps, we could not even have reached the amount of Siemens-Martin steel produced in 1913, owing to the great shortage of labour and the inadequacy of the quantity of scrap collected.

Fortunately, the successes of our Army enabled us to secure from the conquered territories, besides great quantities of pig-iron, semi-finished and finished products, a large amount of discard and scrap. In this we were helped, among other things, by pulling down the industrial establishments already devastated by war or threatened with destruction. We dare not and cannot rely, during a future war, on such a stroke of luck—on being able to improve our supply of raw material by the exploitation of occupied territories, but we must calculate what quantities of discard and scrap would be likely to be at our disposal, in the

course of a future war, for the manufacture of steel. Before the war, the annual quantity of scrap used to be five or six million tons, which were smelted mainly in the steel works. Approximately one half came from the rolling mills, which supplied the steel works with the scrap arising in the course of rolling. The other half consisted of old iron which had done its work and, being worn out, had come back to the steel works to be recast and begin its cycle anew.

The total amount of scrap thus collected was found from experience to be roughly equal to the quantity of iron which had entered some 25 or 30 years ago into the consumption of Germany.

For the year 1913, the amount of iron consumed by Germany was estimated at 9 million tons. Assuming that this quantity, which began its cycle in 1913, should end it in 25 or 30 years, we might about 1940 reckon on some 9 million tons of scrap iron.

Now, in order to obtain, at that date, even the present annual quantity of steel required, one would have to secure, in addition, 7 million tons of steel from other sources.

The Future requires that our Supply of Iron Ore should be assured.—**To secure ourselves effectively for a future war, we cannot, therefore, rely on our supply of scrap iron. It is necessary to increase our output of pig-iron as far as possible.**

The sooner we obtain a greater output of pig-iron and Thomas steel from our works, the sooner will the effect of this increased production be felt in the consolidation of our scrap iron supply and in our total output of steel. It is thus evident that the increase of output of our iron and steel industry is indissolubly bound up with the increase of output of pig-iron and with the permanent safeguarding of our supply of iron ores.

For our military preparation and our war needs, as well as for our power to wage war, it is of supreme importance that the transport of ores should be fully assured to us in time of war as well as in peace. It is not possible ever or anywhere to secure such a guarantee by treaties on paper; it is only possible by military occupation and by

military domination. Now, as far as Germany is concerned, this can only be effected by the incorporation of French Lorraine in the territory of the German Empire.

Treaties offer no Security whatever.—**One often hears the opinion expressed that an absolute guarantee might be secured for our supply of iron ores by means of treaties which Germany might conclude with France, and by which we should undertake to supply coke and coal in exchange for iron ore. This theory is absolutely mistaken, for the following reasons:—**

Every treaty is completely dependent, in its economic effects, on the one hand, on the desire and ability of the contracting party to carry out its clauses, and, on the other hand, on the condition that the observation of these clauses may be compelled by force—whether it is a question of sale and purchase, of exchange, of labour contracts, of participation in business abroad, or of any other form in law. The question of the supply of iron ore by France will always depend on the condition that the supplier should not be impeded in the fulfilment of the contract, either by the French Government, or by the French Courts, or, above all, by an aversion arising from the antipathy, which has been existent for centuries, and which will not disappear the day peace is signed, but will survive in a greater or lesser degree, as hatred or animosity, in the hearts of hundreds of thousands of Frenchmen.

France has already created Difficulties for us in the Past.—How did the French Government behave towards the attempts made in the past to establish German businesses in France? Out of a large number of mining concessions in French Lorraine, only four were granted to German firms. That was the reason why German manufacturers endeavoured to secure shares in the French mining concerns as well. But here also our efforts were checked, because the French manufacturers looked with disfavour on the participation of Germans in the exploitation of the ores which they were seeking. The Board and the Management were to be French, in order as far as possible to avoid difficulties in the administration and development of the mines. Furthermore, even in the cases where the French Government had granted to Germans general rights of concession, there was no lack of every kind of chicanery to embarrass them in the establishment and development of their mines. Here, a new road was only built after long delays; there, difficulties were met in obtaining the necessary authority for laying down railway connections; elsewhere, mining tracks and aerial ropeways were only allowed after long delays and tergiversations.

The French Government also placed obstacles in the way of the establishment of State railways to connect the French "minette" mines owned by Germans with the German blast furnaces on this side of the frontier. Since, even during the peaceful period which preceded the war, the French Government would not permit German owners to enjoy their property quietly, there is all the more reason why we should not expect them to do so after the war. We cannot agree that these conclusions of ours would become void if the French Government, when peace is signed, solemnly undertook to guarantee the proprietary rights of Germans.

For political treaties have been violated by the French before now, even in times of peace. Let us only recall the Treaty of Frankfort, which concluded the war of 1870-71, and by which the two contracting powers granted to each other the clause of the most-favoured nation for their commercial traffic. Germany faithfully kept her promise up to the moment when the war broke out, whereas France for many years past had by various means, both hidden and open, succeeded in restricting the fulfilment of her pledge.

The Possibility of France again resorting to Chicanery in the Future cannot be excluded.—The French Government, for all that they might have guaranteed the inviolability of German property, would still be in a position to make the exploitation and export of iron ores impossible, or to make it more difficult, or at least to slacken and reduce it. Apart from the various forms of chicanery enumerated above, the same results might be attained in other ways at the time when concessions were being granted:—for instance, by barring exportation altogether or restricting it by imposing a duty on exports or by raising the tariff on iron ore exports; by fixing the quantities to be extracted from the various mines, by levying a tithe on ores for the benefit of the French State or other consumers, or by limiting the tonnage of exports — to say nothing of special high taxation. Even if such possibilities were expressly excluded by the treaty of peace, the French mind is so clever that it would not fail to discover other loopholes whereby the rights guaranteed by treaty to Germans would be made void and illusory. Lastly, even if one succeeded in improving the supply of French iron ores to the German blast furnaces, this situation would only last as long as the peace itself. **For, as soon as the sword is drawn, treaties are torn to shreds, whether they be private or political.**

By Displacing the Frontier we recover the Former Territory of the German Empire.—**With a view to the safety of the blast furnaces now situated on the Metz-Luxemburg line, we must fix the new frontier so much further to the west as will protect them from effective bombardment by modern artillery even of the longest range.**

By annexing all such necessary frontier areas, we should incorporate in the German Fatherland a territory which for centuries belonged to the former German Empire. The Kingdom of the Franks used to adjoin the Meuse for a distance of a few miles only, approximately from Charleville to Revin, in the neighbourhood of the present Franco-Belgian frontier. The subsequent French advance which brought them to the Upper Meuse only began in the thirteenth century. France did not extend along the Meuse or go beyond it until the sixteenth century. Even as late as the middle of the sixteenth century, the frontier showed a great westward curve around Verdun, which was German. The bishoprics of Metz, Toul, and Verdun were occupied in 1552 by Henry II., King of France, and this extension of French territory was confirmed in 1648 by the Peace of Westphalia. Lorraine, however, which lay to the east and between these three bishoprics, continued to be united to the German Empire until the year 1766. It was only then that Lorraine became part of France, after having belonged for some 980 years to the German

Empire. The territory of French Lorraine, which it is here proposed to restore to Germany, comprises not more than a few thousand square kilometres, and only contains a few hundred thousand French inhabitants; since, for many years before the war, its population was largely made up of aliens, mainly Italians.

West of the Meuse we now hold territories very much more extensive than French Lorraine, and far more important for the future economic development of France. Hence France would not long hesitate to exchange that narrow strip of frontier territory for her coal districts and the highly developed industrial areas of Lille, Valenciennes, Maubeuge, and St. Quentin. The final loss of these coal and manufacturing districts would be intolerable for France's economic power, whereas she would not suffer any irreparable or permanent loss from the abandonment of the mining districts of Longwy and Briey. For France is one of the richest mining countries in the world. Her greatest ironfields are in Normandy, not far from the coast; besides these, there are other vast ore deposits in Anjou and the Pyrenees, and lesser ones in several other parts of France, not to mention the ore deposits in her North African colonies, Algeria and Tunisia.

It is a curious fact that it was precisely the Germans who ungrudgingly devoted many years of labour and much money to the task of prospecting and opening up the ore deposits of Normandy. The work of exploitation was hardly well under way when the war broke out. Few people to this day are aware that Normandy possesses such rich ore deposits, for the German prospectors kept secret from everyone the knowledge they had acquired in the very last years before the war.

Their estimates, according to which some 5,000 million tons of high-grade ore are lying idle in Normandy, coincide very closely with the results arrived at by the greatest German geologists, Beyschlag and Krusch, whose researches gave them the figure of 4,700 million tons. Taking the average proportion of iron at 45 per cent., this gives something like 2,100 million tons of iron. The other deposits of France and her colonies, taken together, are estimated at more than 3,600 million tons, containing approximately 1,340 million tons of iron. Out of this quantity there would be in the vicinity of Briey and Longwy, according to the most recent investigations, about 2,650 million tons of ore, containing approximately 930 million tons of iron. It is probable that the mining riches of French Lorraine are considerably greater, because, towards the west, the deposits have not been explored to a sufficient depth. Efforts are now being made to remedy this deficiency in our knowledge of the mining districts, and this work is already under way. Even if the present investigations give no fresh result, it may be assumed that there is within the French frontiers a total of at least 8 or 9 thousand million tons of ore, containing more than 6 thousand million tons of iron. If France were compelled to abandon the Briey and Longwy districts to us, she would not thereby yield one-third of her mining wealth, while Germany would thus double her iron deposits, and might thus also double her iron-producing power. In spite of this, however, Germany in the future would not possess in her own soil greater resources of iron ore than France, and what ore she had would be of much lower grade.

It goes without saying that the French must also restore to the Germans the rights acquired by them before the war in Normandy and other parts of France.

III.—THE MINING LANDS WHICH IT IS PROPOSED TO ANNEX ARE OF ENORMOUS VALUE FOR OUR NATIONAL WELFARE AND WITH A VIEW TO THE WAGING OF A FUTURE WAR.

Mining Value and Commercial Value.—In estimating the value of the French territory to be annexed, we must distinguish between the market value, or money value, of iron, and its incalculable value as an indispensable means for the defence of the Fatherland, the existence of the Empire, and, in fact, for the protection and existence of the whole nation. The market value of the iron deposits acquired by us in 1871 between Metz and Luxemburg was estimated by the French at one thousand million francs.

The value of the ton of ore taken at the pit, in 1912 and 1913, was officially given as Mk.2.67 and Mk.2.59. From this one should deduct an average of about Mk.2.40 to Mk.2.50 for gross costs, including allowance for sinking fund, thus leaving for the nett value of the ore in unopened deposits Mk.0.15 to Mk.0.20 a ton. In calculating the value of the deposits of French Lorraine, one must not forget that this ore contains an average of 35 per cent. of iron, whereas the ore extracted on the German side contains from 27 per cent. to 35 per cent. of iron, its average yield being only 30 per cent. Consequently, the difference in value is very great, because the same quantity of French ore requires, in proportion to the amount of iron it yields, less labour for extraction and transport, less oven surface, and less coke for smelting—apart from the fact that it actually produces more iron. Thus one may estimate the market value of a ton of iron ore lying in the French frontier territory at Mk.0.20 to Mk.0.25. The French "minette" would cost us considerably more, if, as heretofore, we had to purchase this ore in France and bring it into Germany. The value of this ore when imported was officially stated in 1913 as Mk.6.80 per ton. From this high price, which we used to pay for our former imports of "minette," it is easy to guess to what an extent Germany would in the future become tributary to France; for we cannot do without the French iron ores.

Economic Value.—But it is not merely a question of the value of the ore in the deposits. From the moment the pit is sunk and the mine opened, the value of the ore, as it is dug from the seam, raised to the surface, taken to the blast furnace, and smelted into iron, increases at every stage and every hour. For the value of this raw material, which in the unopened mines varied in peace-time (as we stated above) from Mk.0.15 to Mk.0.25, according to the waste, rises at every stage of its transformation up to the moment of smelting—being increased, e.g,. by the miner's labour, by railway-transport, by unloading and storing, and by conveyance to the mouth of the blast furnace. It is no exaggeration to estimate the value of the pig-iron extracted from a ton of "minette" at Mk.15. With the transformation of the iron into steel and into rolled iron, into products of common use in war and peace, the value increases incessantly at each fresh operation, whatever the kind of work performed. One extracts from a ton (1,000 kg.) of iron ore from German Lorraine about 300 kg. of iron, which, when converted into iron in bar, are worth about Mk.30 in peace time, being thus twice as valuable as the pig-iron, and more than one hundred times as valuable as the ore required for their manufacture. But even this is not the highest degree of value reached by the ore. With the iron in bar, it is possible, for instance, to manufacture little screws or small pieces of machinery which in times of peace cost Mk.1 per kilogram. Thus one may regard a ton of ore as equal to 300 kg. of pig-iron or 150 kg. of screws; and since the latter, taking into account the scraps produced in handling, are worth in the end Mk.150, we have here an increase in value from 0.15 to 150, or 1,000 times the initial value. It would be easy to quote examples in which the transformation of iron produces even higher increases in value; for instance, in the case of very thin and delicate watch springs, which during peace reach as high a price as Mk.35 per kg.

By these means certain French specialists, like Professor Haller in his book on "Bismarck's Peace Conditions," have estimated the material value of the iron ore still to be extracted from German Lorraine at two thousand million marks, and its capital value, when fully exploited, at 250 thousand million marks.

We will not engage in such daring calculations or attempt to express the economic value in definite figures; but let us compare with the value of the raw material the further values which can be derived from it. Let us consider its value—

1. For the production of iron and steel after the coming peace.
2. For our workers.
3. For German agriculture and for the nation's food supply.
4. For the national welfare.
5. For the exportation of iron and steel products, and for the exchange.

6. For strengthening national prosperity in the course of the coming economic world struggle.
7. For waging a future war.

1. The Iron and Steel Industry after the Coming Peace.

As regards the extension of our output of iron and steel after peace, the ores of French Lorraine would above all help us to secure adequate supplies of raw materials for the period of economic transition. The mining districts of German Lorraine and Luxemburg have a producing capacity of about 30 million tons, and the other German mines of 7 million tons. The mines of French Lorraine have a producing capacity of 20 million tons. With these 57 million tons of ore, we should reach an output of pig-iron amounting to some 19 million tons, which means that shortly after the annexation of Lorraine our blast furnaces might once more be working at their full capacity and again produce the same amount of pig-iron as in 1913. But, by raising the output to 60 million tons, we should reach a situation equal to that of the American mining industry before the war, and we should secure about 20 million tons of pig-iron.

However, since for the blast furnaces of the Lower Rhine, Westphalia, and Upper Silesia, as well as for those situated on the shores of the North Sea and the Baltic, the importation of certain foreign ores, rich in iron and especially poor in phosphorus, is highly desirable, each ton of ore supplied by foreign countries should be a welcome addition to our wealth of iron. It will certainly be difficult, and it will take a long time, for the foreign works to reach once more their former peace-time output, and the former cheapness of ores; much time will also elapse before there is again enough cheap tonnage available to enable one profitably to import ore from distant countries oversea.

It seems highly dangerous that our main supplier, Sweden, in order to strengthen her own iron industry as much as possible, should have stopped the increase of exports by limiting the amount to be exported. It also seems highly dangerous that our second important supplier, Spain, should have already reached the maximum of her mining output ten years ago; and in the coming years the exhaustion of the most important Spanish deposits will become more and more evident. Moreover, Germany is not the only customer of Sweden and Spain for ores; for England, America and Belgium have for a long time past imported large quantities of iron ore from those countries. Regarding our supply of ore from territories under the domination of England and France, we can only expect at first to receive restricted quantities from them after the signing of peace. Our supply of ore from Russia after the war is also very uncertain, since England and the United States have secured by contract the famous Russian mines as a guarantee for their financial assistance to our Eastern neighbours, and have in fact laid hold of practically all the riches of the Russian soil.

We think nevertheless that it is possible within ten years to raise our imports of ore once more to 10 million tons, containing iron to the extent of 5 million tons; and that, with our future supply of iron ore, we should be able again to attain the total output of pig-iron which we produced in peace times.

If we now take into account the smelting of discards and scraps, we should be able, with the help of this raw material and of Thomas iron, to restore our output of steel to about 20 million tons. **At any rate, our mining area increased by the annexation of Briey and Longwy would secure for a century the future of our iron industry, and would thereby help us to keep the place which, thanks to the Lorraine ore, we have conquered in the course of the last ten years, at the cost of keen struggles with England, among the iron-producing countries of the world.** It will be remembered that 11½ years ago we exceeded the iron output of England, which in 1871 was four times greater than ours, and that since then we have constantly been at the head of the iron-producing countries of Europe. But England is making the most strenuous efforts during the war to increase her iron output as much as possible, and she has obtained remarkable results, whereas we remain below the level of our peace-time production. If before the war we had already had the full and entire disposal of the French Lorraine mines, we should hardly have become so gravely dependent on foreign countries for our iron ore supply. **We shall certainly be able, after annexing the French frontier territory, to conduct our iron industry on the broadest lines, and yet to keep a reserve of raw material into the next century. But if after the war the reserve deposits of French ore were to remain closed to us, our iron industry would be doomed to decline.**

2. *The German Workers.*

Let us consider next the very special value of the Lorraine mines for the future of our workers. To draw this picture we must throw a glance back on the past. In 1913, according to the official reports of the German Trade Unions, there were :—

	Number of Workers insured.	Amount of Wages in Marks.
In the German ore-mining industry and in the industries producing and working iron, including the Blacksmiths' Trade Union ..	1,711,834	2,257,180,225
In all the German Industrial Trade Unions	10,630,437	11,516,973,000
The proportion of miners and iron workers was	16%	19.6%

If therefore 16 per cent. of all the German industrial workers were employed by the industries producing and working iron, and if they were paid 19.6 per cent. of the wages paid to the whole of German industry, it evidently follows that the iron workers belong to the best-paid class of workers in the whole of Germany. It is known that at the present time, during the war, the wages of the workers have risen considerably, so that one frequently sees to-day a worker earning twice, and even three times his former peace-time wages. A strengthened iron industry will certainly be able to continue to pay adequate wages after the war, at any rate better wages than the industries which will be less well placed from the point of view of the supply of raw materials.

Besides, the above statistics show that the iron industry alone has employed more than 1½ million labourers, which is more than one-seventh of all the workers of Germany. If for each iron worker we reckon two or three members in his family, the iron industry represents a population of 5 million or 6 million souls, that is to say, it feeds as many people as were living before the war in the Federal States of Wurtemberg and Baden and in the Imperial Provinces of Alsace and Lorraine.

But this survey is not enough. We have only spoken of the workers directly employed in the iron industry. To this one should add the industries which work mainly or almost exclusively in connection with the iron industry, and whose workers therefore derive direct benefit from its prosperity. There is in the first place the coal industry, which in 1913 employed in Germany more than 700,000 miners. According to the calculations of the Rhenish-Westphalian Coal Syndicate, no less than 33 per cent. of the coal extracted in Germany is used in the iron-producing and iron-working industries. Consequently about 230,000 workers of the coal industry were working before the war solely for the supply of the iron industry. It is the same for the workers employed in the chalk quarries, cement factories, etc., as well as for the workers of other branches of our economic activity which are closely connected with the iron industry. It is impossible even to enumerate all the branches of our industry which are thus mutually related, and therefore impossible to calculate the number of workers employed by them.

Let us, however, find out to what extent the iron industry contributes to the traffic of goods by rail. Out of the total goods traffic on German railways (505 million tons) nearly 60 million tons were represented in 1913 by iron ore and every kind of iron and steel products. We must add 65 million tons of coal, taking no account whatever of any other goods. Thus the goods traffic going to and coming from the iron industry represented approximately 125 million tons, or about one quarter of the total quantity of goods carried by the State Railways. If we assume a corresponding proportion for the personnel employed, the total number of men employed by the standard-gauge railways being 782,000, we conclude that 25 per cent. of this number, or an army of

200,000 workers, was directly employed on the railways by the iron industry.

To sum up, the iron industry, together with the coal-mining industry, and the traffic of goods by rail, provides work, bread, and a living for more than 2 million German workers, and for a population of 6 million to 8 million souls.

It seems impossible to us that the workers living by the iron industry, as well as their families, should continue to find work to the same extent as at present without an improvement in our home supply of iron ore; for, considering the great difficulty of resuming our imports immediately after peace on the same scale as before, it would be difficult, without an extension of our frontiers, to insure in the future even the present quantities of raw materials for the iron industry, which now, during the war, is still able to draw supplies from the vast territories occupied by us. It is likely that for years we should not exceed a total of 36 million tons of ore, and that we should fall back to a pig-iron output of 12 million tons.

The shortage of ore would soon be followed by the complete stoppage of certain industries and by a steady increase in the number of unemployed; our iron industry, formerly so flourishing, would no longer be able to assert itself on the world market. The workers would emigrate in large numbers, seeking their bread abroad, and would thus be irrecoverably lost for the defensive strength of the German Empire and for Germanism (*Deutschtum*). On the other hand, an iron industry abundantly supplied with home-produced ore would provide us with sure centres of employment which no worker would willingly leave; for all legitimate claims for wages could be met and additional workmen might be permanently engaged. In the newly acquired mining area work could easily be found for 30,000 miners, and each million tons of ore from French Lorraine would be added to the home output, and would secure good wages in iron-producing and iron-working industries for 10,000 new workers. If it were possible in the course of time to raise the output of iron and steel above our former peace-time output of 19 million tons, several hundreds of thousands of new workers could easily find work. In any case, a policy of production based on an adequate supply of raw materials is the best social policy conceivable.

In the above survey of the number of workers owing their employment to the iron industry, we have shown how greatly the prosperity of the coal miners depends on the iron industry. It would be possible also to quote numerous other industries to show the intimate relationship between the iron industry and the various branches of our national prosperity.

3. German Agriculture and the People's Food Supply.

For several decades past the iron industry and agriculture have also helped one another in a remarkable way. This was more notable from the end of 1870, when German engineers succeeded in putting to practical use the English discovery of the Thomas process, which enabled pig-iron containing phosphorus to be converted into steel by fusion. It then became possible to use the Lorraine deposits, rich in phosphorus ore, and one thus obtained a sort of slag called Thomas slag, which, after being ground, gave what is known as Thomas flour, a fertiliser rich in phosphorus and of high value.

Of the three fundamental vegetable nutrients—phosphoric acid, nitrogen, and potash—phosphoric acid is of preponderant importance. Only infinitesimal quantities of it exist naturally in the soil; moreover, the soil loses it through the main agricultural products, corn and cattle. On the other hand, potash, for instance, is retained in the ear of corn, and is eventually returned to the soil through the straw used as litter, as well as in the urines. Thus potash in agriculture goes through a cycle. Nitrogen is likewise unable to make up for the lack of phosphorus fertilisers, even when it is found in considerable quantities. One might therefore more easily imagine the agriculturists producing fine crops with the aid of phosphoric acid alone, even without the other two kinds of commercial fertilisers, than with potash and nitrogen, and without phosphoric acid. This is confirmed by the fact that in Germany, the home of potash, the use of potash up to the outbreak of war had not yet risen to the figure for the consumption of phosphoric acid, although potash costs only half as much as the phosphorus fertiliser. The solution of the riddle lies in the fact that the yield of our crops of cereals depends on a more or less careful and adequate phosphorus fertilisation, since the soil by its own nature already contains a certain amount of potash.

The needs of German agriculture during the war were only met in a proportion of 40 per cent. The deposits of brown phosphate in Germany have almost wholly ceased to be worked. Furthermore, the large imports from North America, Algeria, Tunisia, etc., which we had at our disposal in times of peace, have wholly stopped as the result of the war. In the critical situation thus created, the Prussian Ministry of Agriculture as early as April, 1917, offered a sum of Mk.100,000 for prizes to stimulate the discovery of new home deposits of phosphates. If, indeed, German agriculture has not been placed in a still more critical situation during the war, it is thanks to the transformation by the German iron industry of ore containing phosphorus.

It cannot be doubted that, for a long time after the war, if not for ever, the world shortage of phosphoric acid will be felt in Germany, as well as in all other countries, because the loss of phosphoric acid by the soil is very high in proportion to the infinitesimal amount of this fundamental food of the vegetable world which it naturally contains. There are but restricted possibilities of satisfying the world's great consumption of phosphorus fertilisers, which increases with startling rapidity. It is possible that before long the deposits of raw phosphates now known may no longer be sufficient. Will new deposits be discovered that will be both adequate and profitable to work? This is a question for the future to settle. Meanwhile we must expect the price of phosphoric acid to go on steadily rising. The general shortage of tonnage makes the speedy importation at an early date of overseas phosphates impossible in the requisite quantities. One must add that the growing want of phosphoric acid in every part of the world, and not least in the producing countries, like the United States, will result in greatly increasing the difficulties in the way of exportation, and might easily bring about prohibitions of export.

Therefore the question of providing phosphoric acid in the future is for German agriculturists a matter of paramount concern. As the only home source of phosphoric acid will remain the Thomas slag flour, the increase of this product by the annexation of the mining area of Longwy, situated at our doors, is as vital a necessity for German agriculture and the German people as is the securing of an iron ore supply for our iron industry.

France, on the other hand, has such abundant reserves of phosphoric acid in her African possessions that in this respect also she can easily do without the deposits of Briey and Longwy.

4. *The National Welfare.*

The beneficent effects of an iron industry built upon an adequate mining basis are also felt in the general prosperity of the nation. Let us think of the Empire, the State, the commune, which are great consumers of iron and steel. With the gigantic and ever-increasing quantities of iron and steel in every form which are required by our communities, this industry's capacity of output cannot be a matter of indifference to our Treasury and our Government. Besides, the State must consider it highly important that the branches of our economic system should be able to bear properly the taxes imposed on them, and pay them with regularity. The State must also consider it highly important that the loans of the Empire, the State, and the communes should find ready subscribers. Unfortunately it is not possible to form even an approximate estimate of the great importance of our iron industry in this respect. **The services rendered by the iron and steel industry to the working of our railway system and of our military railways for the purposes of the war have been quite manifest. It is utterly impossible to conceive what turn our military operations might have taken if we had not been able to carry out our formidable movements of troops at the right moment, whenever it was necessary.** Moreover, we owe it to the iron industry of Germany that we had at our disposal not only a very extended railway system, but also an adequate number of trucks and locomotives; for this industry not only supplied the iron for the tracks, but by its steady development and its increasing demand for facilities of transport, both for its own products and also for ore and coal, it never ceased to urge the management of the railways to new efforts, and incited it to work the State railways on very broad lines.

5. *The Export of Iron and Steel Products and the Exchange.*

Let us now take another field of political economy and consider exports. Here, too, the effects produced by the mining industry and the coal industry are very far-reaching. By adding all the products manufactured wholly or in part with iron and steel, we find from official figures for the year 1913 that one-half of our output of iron and steel was devoted to carrying out orders from abroad. Out of a total exportation amounting in value to 10.1 thousand million marks, the total value of the articles in question represented 2¼ thousand million marks. Consequently our iron industry may claim 22 per cent. of our total exports. This clearly proves its importance as a protector of export, as a support for our exchange, and thus for the import of raw materials and the supply of other industries in raw materials from abroad; it also shows what its importance may be after the war. Its share in our exports will no doubt be considerably higher during the period of economic transition, because it will be able, immediately after the conclusion of peace, to play a greater part in foreign markets without any prejudice to our home needs. Greater facilities for our supply in raw materials will also produce the most favourable effects in this direction, assuming that the Resolutions of the Paris Economic Conference cannot be fully applied.

6. *Strengthening Germany's National Prosperity in the course of the Coming Economic World Struggle.*

It is surprising to hear people state so often that the iron industry of Germany will be powerful enough to overcome, in the future, as in the past, all obstacles without State help, and to reconquer its former dominant position.

Without ignoring the inherent strength of our iron and steel industry, we would point out that it is a great mistake to believe that it will be able to triumph over every kind of obstacle. **If, indeed, we failed to prevent our enemies from applying in the future the Resolutions of the Paris Economic Conference, we should meet with insurmountable difficulties throughout the world, not only with regard to markets for our goods, but also in the purchase of raw materials and in our commercial and industrial activities of every kind. It is absurd not to take the decisions of the Paris Conference seriously, and to think that the restoration of the "status quo ante bellum" would of itself suffice to put an end to the economic war.** Such a view is altogether illogical, and has often been belied by events during the war. It was decided quite openly in Paris, as the enemy Press points out every day, that in the economic war every possible measure is to be taken to undermine and destroy the economic strength of the Central Powers. Our enemies will not be content with making it more difficult for us to find a market by refusing to us the most-favoured nation clause, by raising the customs duties, and by prohibiting the importation and depreciating the value of German goods; they also intend to create every possible difficulty that may hinder the Central Powers from obtaining supplies of raw materials. We have already stated above that our enemies have laid hold upon the riches of the Russian soil. This, however, only partly illustrates the efforts they are making to obtain control of all raw materials everywhere. It cannot be denied that in this kind of war for raw materials our enemies have already secured great successes, and we must shape our conduct accordingly. **One of the most efficacious counter-measures that we can take consists in incorporating as a new link in our chain all those frontier lands which are absolutely indispensable for our supply of food and raw materials, and for the reconstruction of our trade. Only then will the iron manufacturers be freed from one of their greatest anxieties; and this must not be merely for the period of economic transition, and for the period of the future economic peace, but also for the eventuality of a future war.**

An iron industry consolidated by the extension of its basis in raw materials, and securely established for a long time, also contributes to compensate the great weaknesses inflicted on our national organisation by the disturbance of many branches of our economic life during the war. Even if all the economic forces of Germany are organised to the utmost, and even if we derive great benefit from our improved political situation, it will inevitably take a long time to eliminate all trace of the damage which the war has unfortunately inflicted on our industries; for many of them were completely dependent on foreign countries, and partly dependent on our present enemies, for their supply of raw materials. Since we shall probably be unable, in the first few years of peace, to restore to all the branches of our economic life the full productive vigour which they possessed shortly before the war, we must endeavour to consolidate further the still strong pillars of our national edifice. In periods of economic stress, a single powerful industry may often serve as a support for other industries. **The Government will be better able to deal successfully with questions of foreign policy, affecting the country as a whole, if it has powerful economic organisations behind it. Germany would have in her hand for many years a trump card if her iron industry had its supply of iron ore secured for the future.**

7. Incalculable Value for Waging a Future War.

With a view to the possibility of a future war, we must improve and develop our home supplies of iron ore to the utmost, because the greater the iron resources of an industrial State, the more formidable an enemy it will be. It does not seem to us impossible, as we have already indicated, that in the next decade after the signing of peace, after the return to the old German Fatherland of that part of Alsace-Lorraine which is still French to-day, our iron industry should once more reach its former level of production in times of peace, and should fully and completely profit by it in a future war. An increase of our iron power even beyond the level of this peace-time production would result in doubling or trebling the fighting strength of our army and navy.

The present war proves that with our guns and machine guns we are able to defend ourselves against an enemy superior in numbers, and even that we can annihilate him, and that his sacrifice of huge masses of men is of no avail. We can, and we must, spare the blood of our own people in the future struggle for life by the creation of a powerful iron industry: for future wars will be decided not so much by the grouping of masses of men into gigantic armies as by the perfecting of a technical organisation able to equip those armies with ample and ever-increasing supplies of offensive and defensive weapons. Thus it is that the ironfields of Lorraine, which saved us in the present war from destruction by our enemies, will likewise protect us in a future war, ensure the existence of our Empire, and save the blood of our people.

IV.—CONCLUSION.

Whoever has followed our survey from beginning to end will certainly feel strengthened in the conviction that we cannot be too grateful to Bismarck, our Iron Chancellor, rightly called the founder of the Empire, for the fact that the Peace of Frankfort in 1871 gave us the mining deposits situated between Metz and Luxemburg, which were only partly known at that time.

For without the ironfields of Lorraine we should never have been able to wage this war successfully, since it consumes such enormous quantities of iron and steel. Neither should we have been able without Lorraine, in spite of our constant labour during 44 years of peace, to secure any appreciable results either in our home economic development or on the world markets. Even less would the iron industry have succeeded in giving work to over two million men, and food to the parents of several million souls.

In a German Empire deprived of Lorraine we should lack one of the elements that give the greatest vitality to German national unity and to the defensive strength of Germany. Our statesmen who, when peace is concluded, will help in deciding the fate of the German

Empire, will have to see to it that the future peace should incorporate in the German Empire all the foreign territories which are indispensable to our life, to our national prosperity, and to our defensive power.

In the case of the strips of French frontier territories for which we are asking, it is not an annexation in the evil sense of the word, but an incorporation of parts of territories which several centuries ago were violently torn from the old German Empire.

The displacement of our Lorraine frontiers is absolutely indispensable not only for the security of the German Empire in a future war, but also for the consolidation of our national welfare, particularly in order to secure work for our great world of workers, to increase the agricultural production of our soil, and thereby to improve the situation of all and sundry Germans.

The retention of all Lorraine in the hands of Germany will provide us with a war indemnity and will consolidate the German Fatherland; it will also serve as the guarantee of a lasting peace and a pledge for the safety of the Empire. Our victory gives us the opportunity as well as the right of adding, precisely where the edifice of the German Empire is most exposed to invasion, a cornerstone against which all the assaults of the foe will be shattered.

If we neglect this opportunity, the German people in a future war will be doomed to ruin.

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